

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/804,684
Applicant : Michael J. Ziegler et al.
Filed : March 19, 2004
Title : EPOXY POLYMER ADDITIVES FOR
POWDER COATINGS
Group Art Unit : 1712
Examiner : Sellers, Robert

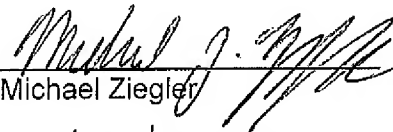
Box Stop Non-Fee Amendment
Commission for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

1. My name is Michael Ziegler. I am a Research Chemist employed by PPG Industries, Inc. and a joint inventor of the above-identified patent application.
2. I prepared a polymer that was the reaction product of Epon 1009 epoxy resin (13.24% by weight) and ϵ -caprolactone (86.76% by weight) as described in Example 1 of the present patent application. The theoretical epoxy equivalent weight for this polymer was 20,977. Analysis of this polymer by titration of the epoxy functional groups showed an epoxy equivalent weight of 34,127.
3. The results described in the foregoing paragraph mean that the polymer had only about 60% of the epoxy groups that it would be expected to have if none of the epoxy groups were consumed during the grafting of the lactone chains, which means that the resulting polymer has a functionality of less than 2 epoxy groups per molecule. In my opinion, this result is not unique and would be seen with other examples of the comb polymer described in the present application.
4. In my opinion, the above-described polymer would not perform well as a crosslinker for a carboxyl functional polyester because of the reduced crosslink density associated with the use of an epoxy resin with fewer than two reactive groups per chain, which could result in poor physical properties in the resulting coating, especially hardness, solvent resistance, and flexibility.

All of the foregoing statements are made of my own knowledge, are true, and all statements made on information and belief are believed to be true.

I acknowledge that willful false statements and the like are punishable by fine or imprisonment, or both and may jeopardize the validity of the application or any patent issuing thereon.


Michael Ziegler

Date: 9/18/2006